

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re application of: |) | Attorney Docket No. 911568635006 |
| Jan Andersson |) | |
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| Application No.: |) | 09/381,899 |
| |) | |
| Filed: |) | December 16, 1999 |
| |) | |
| For: |) | METHOD AND APPARATUS |
| |) | FOR AUTOMATIC DATA |
| |) | ACQUISITION OF FORMS |
| |) | |
| Examiner: |) | Bashore, William L. |
| |) | |
| Art Unit: |) | 2176 |
| |) | |
| Confirmation No.: |) | 4564 |

REMARKS

New claims 56 and 57 have been added to the application so that claims 2, 4, 5, 8-10, 13-15, 18, 19, 21, 22, 25-27, 30-32 and 41-57 are now pending in the application. Claims 41, 45, 49, 50, 51, 53, 54, 55, 56 and 57 are independent claims.

Claims 2, 4, 5, 8-10, 13, 14, 19, 21, 22, 25-27, 30, 31 and 41-49 are rejected under section 103 based on Pizano et al., U.S. 5,293,429 (Pizano) in view of Karnin et al., U.S. 5,434,933 (Karnin) and in view of Betts et al., U.S. 5,428,694 (Betts) and further in view of Suzuki, U.S. 4,933, 979 (Suzuki). This rejection is respectfully traversed.

Applicant incorporates by reference here the comments made in previously filed Remarks mailed on or about December 15, 2004 and April 22, 2005. In those Remarks, the cited references to Pizano, Karnin and Suzuki were explained in detail.

It is worth emphasizing that the cited Pizano and Karnin references teach methods of classifying documents using predefined templates or templates inputted to the system before processing commences. Suzuki is analogous and requires data to be on a fixed form.

The newly cited Betts reference also teaches templates. More specifically, Betts teaches a system that is supposed to be quicker in identifying forms. However, the Betts system requires "master forms" to be predefined in the system and these predefine a new processing template. See Abstract of Betts. See also Betts, column 3, lines 33-35. Betts states that "[i]n this manner, the invention minimizes the time required to perform the forms recognition process, by adapting the process sequence to prevailing conditions in the system at the time the completed form is being processed." See Betts, column 4, lines 7-11. Betts also states that "[i]n business applications using many types of master form documents, many form definition data sets will be stored in the system. In many business applications, completed forms corresponding to many different types of master forms are received and processed on the same day. The volume of completed forms and the diversity of their master form types, makes it important to minimize the time required to perform the forms recognition process." See Betts, column 2, line 64 through column 3, line 4.

In Betts, the new processing template is a function of the "master forms" predefined in the system. If there was no predefined master form for a new formatted processing document than the processing template will run through it sequence without any identification being made. The data on the new document will have to be manually entered or a new master form will have to be created and predefined so as to change the processing template.

For example, if a new vendor submits a new invoice with a new invoice format, or if an existing vendor alters its invoices so as to have a new format, say for instance, a format having three vertical and separated columns of data so that the new invoice does not look like the invoice documents of Betts FIGS. 1A-1H, and further if there is no bar code and no OCR code, the Betts system will not identify the new invoice. This happens because the new invoice does

not look like any of the master forms predefined in FIGS. 1A-1H. The predefined processing template 390, FIGS. 2A and 3G which is based on the master forms, FIGS. 1A-1H, will return negative results on each of the relevant search steps when attempting to identify the new invoice.

For Betts to process the new invoice, a new master form will have to be predefined before processing can continue.

The examiner contends that "[a]lthough Betts teaches a template, said template is not used for storing a predefined pattern. Instead, it is used for generally showing the process sequence of data to look for (a processing template). This allows for adaptively changing the processing sequence as the system gathers clues about an unknown form for eventual recognition and data gathering (i.e., skipping bar code recognition of the processing template reveals that no bar code should be present, etc.). . . ."

This contention does not go far enough because if Betts is not predefined, a new document that does not have a bar code or an OCR code or the specific line geometry of a master form the "adaptive processing" runs its course and fails at recognition. Under these circumstances Betts is cumulative of the other cited references which also require predefined templates. As will be explained below, the invention here operates differently and the claims include limitations not found in any of the cited references.

One further point, Betts is "adaptive" only to the extent that if a number of the documents being processed do not show, for example, "skew and offset" then that step can be bypassed in the future to save time. There is no teaching in Betts of being adaptive when handling a new document with a new format during processing where that format was not previously defined outside of the processing operation.

As noted above and in the earlier Remarks, the use of predefined forms or templates in the cited references is a distinguishing feature between the cited art and the subject application.

Of the rejected claims, claims 41, 45 and 49 are independent. The rest are dependent either from claim 41 or claim 45. Claim 41 includes limitations not found in any of the cited references, namely, that "said plurality of documents having a variety of formats not predefined for said computer system and containing data content in locations not predefined for said computer system," and "either automatically storing in said computer system document maps of presented documents. . .that do not coincide. . .with any document map previously stored in said computer system, or automatically identifying presented documents" and "said automatically storing step of document maps. . .that do not coincide. . .with any document map previously stored in said computer system automatically occurs as each document map fails to be identified. . . ." None of these three limitations are found in the cited references.

In each reference the presented documents have a fixed form with known data locations, such as in Suzuki, or are "predefined template forms" as in Pizano and Karnin or is one of the "master form images" pre-defined in the Betts system such that the predefined processing template is able to successfully identify the document. Secondly, none of the cited references disclose the limitation of automatically storing document maps that do not coincide with document maps previously stored. In each of the cited references, documents which are not identified cannot be processed until a new template is predefined or input is done manually.

An additional limitation (the fourth) now in claims 41 is that agreement or the lack thereof between a newly presented documents and stored documents must be according to "predetermined limits for agreement with a factor of probability". None of the cited references disclose such a "probability" limitation.

Claim 45 includes one or more of the above identified limitations: an apparatus comprising "a computer system having. . .structure to automatically receive, generate, store, search, compare data from a plurality of received documents having a variety of formats not pre-defined for said computer system and containing data content in locations not pre-defined for said computer system and. . .when there is a lack of recognition, said computer system has structure to automatically store such unrecognized maps as each of said unrecognized maps fails to be identified according to predetermined limits for agreement with a factor of probability." As noted hereinabove, these limitations are not found in any of the cited art.

Claims 49 includes the limitations of "causing said computer system to receive a plurality of documents unknown to said computer system, said plurality of documents having a variety of formats. . .said formats and said locations not pre-defined for said computer system; causing said computer system to generate a map. . .without manual input;. . .causing said computer system either to identify each of said documents maps generated or to store those generated document maps not identified as each of said generated document maps fails to be identified. . . ." As noted above, each of the cited references requires preprocessing definition whether prior to the start of processing or during processing and before a new type of document can be identified.

Claims 50-55 are rejected under section 103 as being unpatentable over Pizano in view of Betts and Karnin. This rejection is also respectfully traversed.

Claim 50 is a method having the limitations: "automatically searching stored identities derived from previously processed documents made during processing; and either automatically making identification. . .or automatically storing an identification of such processing document. . . ." None of the cited references search document identities from previously processed documents made during processing. All of the searching for identification purposes is

based upon predefined forms or templates or processing based on those forms. Further, none of the cited references automatically make an identification or automatically store an identification of a non-predefined document. The cited references if faced with an unidentified non-predefined document must stop processing to input a new master form or template so that the new unknown document can be handled by the system.

Claim 51 includes the limitations of "providing to said data processing apparatus a plurality of data containing documents of unknown identity for processing in the absence of any pre-processing inputted definition of master forms for defining new processing templates for identifying said plurality of documents. . .and automatically reading and storing data from said plurality of data containing documents in the absence of pre-processing inputted data location information."

Claim 53 includes the limitation of "providing to said data processing apparatus a plurality of documents of unknown identity for processing in the absence of any inputted definition of master forms for defining processing templates for identifying said plurality of documents before processing and in the absence of fixed forms. . ."

Claim 54 includes the limitations: "said data storage structure including identification data derived from previously processed data containing documents wherein the identity of presently processing document is automatically compared to the identities of the previously processed data containing documents and a match is found, or if no match is found, the identity of the presently processing document is automatically added to the data storage structure. . ."

None of the cited art compares processing documents to the identities of previously processed documents. Instead, the comparison is between a new documents and forms, templates or master

forms images pre-defined to the system. Furthermore, if no match is found, none of the prior art references automatically adds the processing documents to data storage.

Claim 55 includes the limitations of "processing a plurality of. . .documents. . .in the absence of preprocessing templates and in the absence of a requirement that said plurality of data containing documents be created in a predetermined format; and either adaptively identifying documents from said plurality of documents. . . or identifying documents from said plurality of documents in said data processing apparatus. . . ." None of the cited references discloses the limitation of adaptively identifying documents without a match being found. In each of the cited references a match must be found with a pre-defined form, template or master form image.

New claims 56 and 57 include, respectively, limitations of automatically storing processing documents during processing when they do not coincide with any previously processed document and a limitation of seeking agreement with a factor of probability.

Conclusion

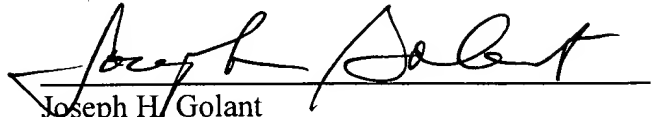
The cited references are brought together to cobble a system not from teachings or suggestions found in the references, but from teachings in the application. This does not result in a viable section 103 rejection.

None of the cited references disclose a system separately or in any combination that accepts for processing the input of predefined documents and non-predefined documents and automatically stores both types of documents. If predefined, the document is recognized and the data fields are read and the data recorded. If non-predefined, the document is still stored, the data fields are read and data is recorded. This non-predefined document then becomes a document which is available for comparison with new non-predefined documents that are being processed.

In view of the above amendment, comments and analysis, allowance of all claims in respectfully requested.

Dated: December 13, 2005

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joseph H. Golant", written over a horizontal line.

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